

## A REDESCRIPTION OF TWO SPECIES OF CALIFORNIA THRIPS

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Two species of thrips (Tubulifera: Phloeothripidæ) were described by A. C. Mason in 1926 in this journal (Vol. 2, pp. 155-157). *Hoplandrothrips sycamorensis* Mason was described from five females and one male from Springville (Tulare County), California, taken "under bark or on leaves of sycamore trees." *Zygothrips californicus* Mason was described from a single female collected at Orange Cove (Tulare County), California, from an orange tree.

Through the kindness of Dr. Mason these species have been studied and with his permission the types have been remounted in order to redescribe and illustrate them. Since the writer's collection is not extensive in these two genera it will perhaps become the part of some other thysanopterist to further check the position of these species. Thus, this paper has been prepared with the intention of aiding in clarifying the systematics of this rapidly growing group of insects.

Several visits to the type locality of *Z. californicus* have failed to uncover any additional specimens. One male of *H. sycamorensis* was collected by the writer under sycamore bark at Bakersfield, California, on August 21, 1935.

### HAPLOTHRIPS CALIFORNICUS Mason, 1926

According to Priesner (Thysanopteren Europas, p. 625, 1928) the chief difference between *Haplothrips* Serville and its subgenus *Zygothrips* Uzel is that sense cones on the third antennal segment are lacking in *Zygothrips*. In Mason's species *californicus* one sense cone is present on the third antennal segment (fig. 5). On this basis it should be referred to *Haplothrips* only. The writer's collection does not contain many of the North American *Haplothrips* but *californicus* was compared with thirty species at hand and found to be distinct.

The original description may be emended as follows:

Color, uniformly brown to dark brown; legs concolorous with body. Fore tarsi and distal third of tibiæ light brown. Antennæ

with segments I and II dark brown, III yellow, IV to VIII light brown. Wings colorless. Spines light brown and not conspicuous.

Head (fig. 1) longer than broad, rounded in front, slightly divergent at posterior margin, with transverse lines. Cheeks smooth. Post-ocular bristles moderate in length and not sharply pointed. Three ocelli; the anterior ocellus on swollen vertex extending forward over base of antennæ, posterior ocelli contiguous with inner margins of eyes. Mouthcone short, blunt.

Prothorax (fig. 2) slightly over twice as wide as long. Bristles rather short and blunt. Fore tarsus (fig. 4) with two claws. Fore femora enlarged. Wings transparent. Fore wing constricted at center with 9 to 11 interlocated hairs on the posterior distal margin.

Abdomen oval, tapering to tube (fig. 3) which is less than half the length of head.

Measurements of female holotype: Total length (not including antennæ), 1.46 mm. Head, length 0.227 mm., width 0.175 mm. Prothorax, length 0.123 mm., width 0.273 mm. Abdomen, width at base 0.325 mm. Tube, length, 0.091 mm., width at base 0.061 mm. Length of antennal segments (in mm.): I, 0.039; II, 0.050; III, 0.052; IV, 0.059; V, 0.052; VI, 0.046; VII, 0.044; VIII, 0.024; total length (not including intersegmental membranes) 0.356 mm. Length of bristles at posterior lateral angle of prothorax 0.046 mm. Length of post-ocular bristles 0.036 mm.

#### HOPLANDROTHRIPS SYCAMORENSIS Mason, 1926

Mason's species *H. sycamorensis* does not entirely agree with the definition of the subgenus *Hoplandrothrips* as set up by Hood (Proc. Ent. Soc. Wash., 14:145, 1912). The writer has not seen the type of this subgenus (*H. xanthopus* Hood, 1912) but has *H. microps* Hood, 1912, described at the same time. In *H. sycamorensis* the head is roughened and more typical of the genus *Phloeothrips* Haliday, 1836, with the genal spines directed forward and arising from tubercles placed at irregular intervals on the cheeks (fig. 6). This species is very close to *Phloeothrips* (*Hoplandrothrips*) *armiger* Jones, 1912, described from a unique male. Based on the few specimens available, the males of the two species may be separated as follows: *H. armiger* has three long dilated bristles on fore margin of fore wing at base and *sycamorensis* has the two basal bristles only dilated at the tip (fig. 10). (The female has all three bristles dilated). The male has been illustrated in this paper for comparison with Jones' species (U.S.D.A., Bur. Ent., Tech. Ser. No. 23, part 1, plate VII, figs. 1-4, 1912). Until the female of *armiger* is de-

scribed and a larger series of both species becomes available for study the constant differences between these two species and other closely related forms cannot be clearly defined.

A redescription of *sycamorensis* is presented below.

Female: Color dark brown, with irregular, red hypodermal pigmentation. Fore tibiae and fore tarsi very light brown to yellow. Middle and hind legs with tip of tibiae and tarsi light brown. Antennal segments I and II dark brown, basal portion of segments III to VI yellow, remainder of segments light brown to brown.

Head about 1.5 times as long as broad. Cheeks slightly arched, converging posteriorly, and with small, irregularly placed, warts from each of which arises a short spine. Frons overhanging base of first antennal segments. Third antennal segment with two sense cones, fourth with three, second segment with a small, bean-shaped sensory area in center (fig. 11). Three ocelli, posterior pair about opposite center of eyes. Post-ocular spines not unusually long, with dilated, truncate tips (fig. 6). Mouth-cone sharply pointed and reaching margin of prothorax.

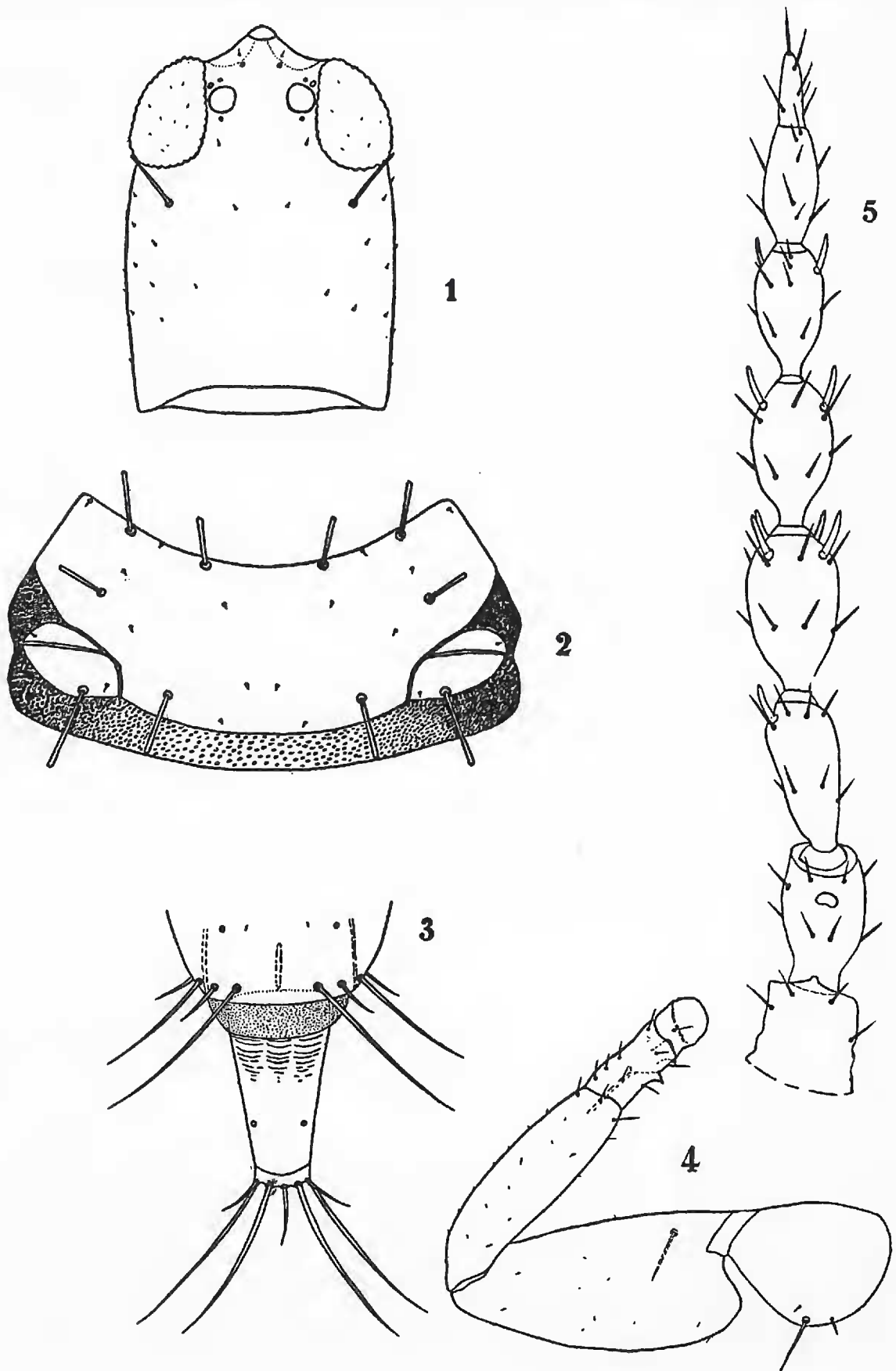
Prothorax about half as long as wide. One long spine at each anterior lateral angle, two shorter spines on anterior margin, one mid-lateral (not mentioned in original description), one long spine at each posterior lateral angle (one at left missing in male paratype, fig. 7), and two shorter ones on posterior margin. All spines mentioned dilated and truncate at tip. Fore tarsi with a tooth at base. Fore tibiae with one long, slender pointed hair in center of underside. Fore femora enlarged with a similar long hair near base on underside. Fore coxae (fig. 8) with one long, dilated spine with four or more short, pointed spines posterior to dilated spine. Tarsi of middle and hind legs unarmed. Wings colorless with the exception of a light yellowish shading in center in basal third. Five to ten interlocated hairs on posterior margin of fore wing at tip. Three dilated spines at base of fore wing on anterior margin (distal spine of the three in male not dilated at tip), (fig. 10).

Abdomen large, tapering rather abruptly to the tube. Usually three long dilated hairs present at posterior lateral margin of each segment. Terminal hairs as long as tube (fig. 9).

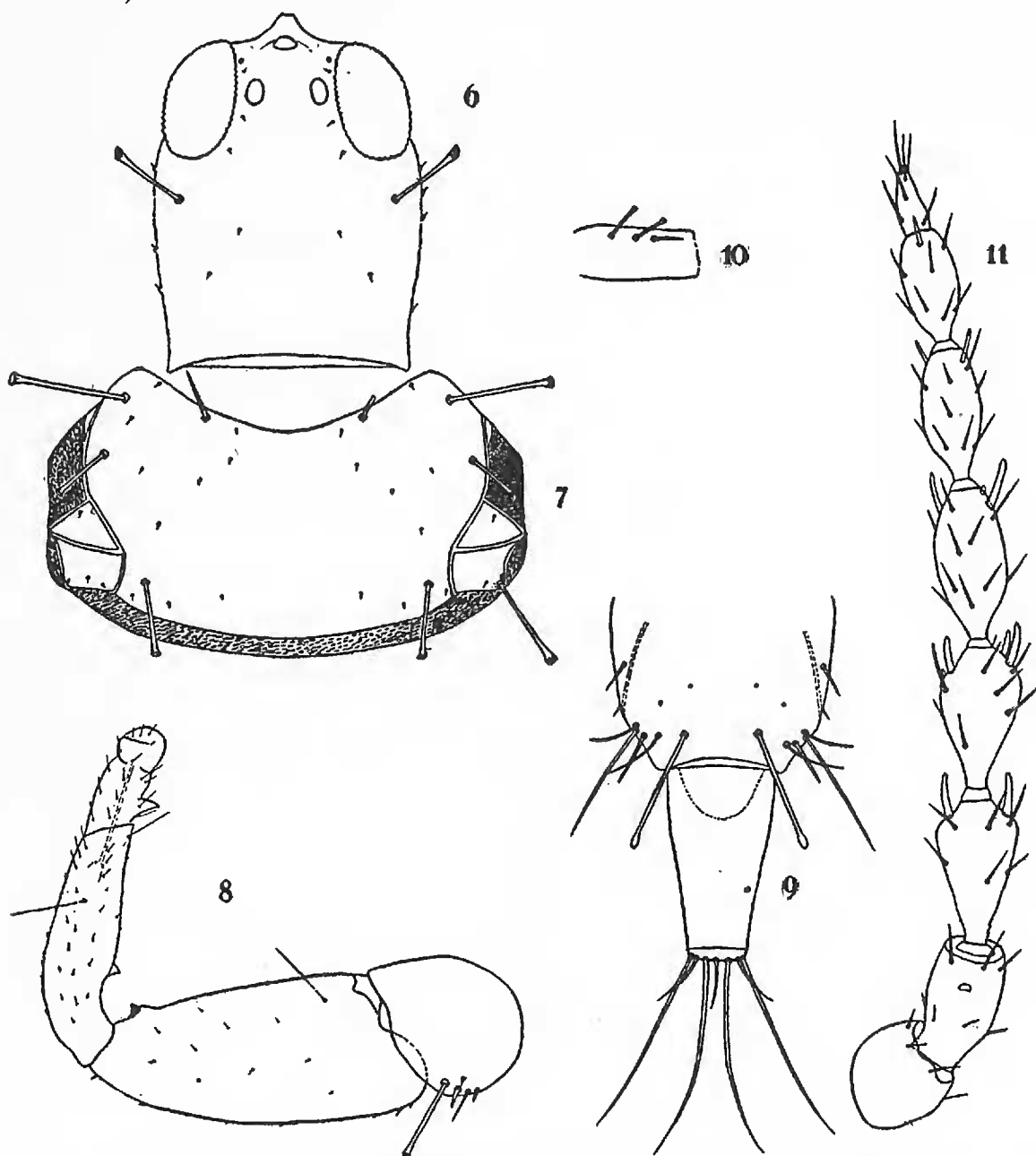
Measurements of female type: Total length, not including antennae 2.30 mm. (abdomen somewhat distended). Head, length 0.32 mm., width 0.23 mm. Prothorax, length 0.18 mm., width, 0.37 mm. Abdomen, width at base, 0.408 mm. Tube, length, 0.15 mm., width at base 0.078 mm. Length of antennal segments in mm. (not including intersegmental membranes): I, 0.034; II, 0.054; III, 0.067; IV, 0.072; V, 0.059; VI, 0.049; VII, 0.046; VIII, 0.028; total length, 0.41. Length of post-ocular bristles 0.058

mm. Length of bristles at posterior lateral angles of prothorax 0.075 mm.

Male (paratype): Somewhat smaller and more slender. Fore tarsi with a strong tooth (fig. 8). Fore tibiae with blunt tooth



near base on inner side. Fore femora enlarged with two blunt teeth on inner margin at distal end engaging tooth on tibiae. This condition is usually indicative of the raptorial function. Length of post-ocular bristles 0.062 mm. Length of bristle at right posterior lateral angle of prothorax 0.059 mm. (none present on left side).



1, Dorsum of head *Haplothrips californicus* Mason; 2, Dorsum of prothorax of *H. californicus*; 3, Tip of abdomen of *H. californicus*; 4, Left fore leg of *H. californicus*; 5, Left antenna of *H. californicus*; 6, Dorsum of head of male of *Hoplandrothrips sycamorensis* Mason; 7, Dorsum of prothorax of male of *H. sycamorensis*; 8, Left fore leg of male of *H. sycamorensis*; 9, Tip of abdomen of male of *H. sycamorensis*; 10, Base of right fore wing of male of *H. sycamorensis*; 11, Left antenna of male of *H. sycamorensis*.